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EXAMINER

HOFFMANN, JOHN M

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 06/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/558,770

Applicant(s)

ALLEN ET AL.

Examiner

John Hoffmann

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-6, 12-14, 18-23, 98 and 99 is/are pending in the application.
- 4a) Of the above claim(s) 98 and 99 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-6, 12-14 and 18-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION***Election/Restrictions***

Newly submitted claim 98-99 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The are directed to non-elected specie C3

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 98-99 withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

It is noted that Applicant gave no indication that claims 98-99 were to have been directed to the elected invention – as Applicant is required to do if such was the intention (MPEP 809.02(a)). Claim 98 is substantially echoes withdrawn claim 7.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-6, 8-14 and 18-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 6 and 12: there is no antecedent basis for “said centerline hole”. Claim 1, line 5, there is no antecedent basis for “the center of the hole” or for “the hole positioned along the centerline” or for “the centerline”.

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Claim 3 refers to having a particular dispersion when the intermediate glass object is used to make a fiber: this limitation is used to further define the step of reducing. It does not explicitly limit the step of drawing the fiber – nor does it explicitly limit the fiber which is drawn. However, it is very possible that it implicitly limits drawing step and/or the fiber drawn. And/or it possible that applicant *intended* such to require the final fiber has such a polarization. Regardless, one of ordinary skill would not be ascertain what the claim actually requires – and thus places and unreasonable burden on the public. For example, one can use applicant's preform in a poorly designed drawing process, so that it does not have the low dispersion. In other words, there is confusing antecedent basis for the step "to make said single mode optical fiber" line 7, claim 3 : it is unclear if it is in addition to the "for making" of line 3, and/or the implicit making of the fiber of the preamble.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-6, 12-14, and 18-23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

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There is no support for the glass object having an internal wall (claim 1). The only mention of a wall is the wall (81) of the furnace.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onishi 6076376 alone or in view of Glodis 6105396.

It is noted that there is no order to the claimed steps.

Col. 8, lines 48-55 of Onishi discloses that the preform is made by MCVD or the rod-in-tube method. Each of these methods requires the provision of a glass object having the centerline hole. The hole is removed by heating in both the MCVD and the RIT method: it occurs either prior to or during drawing. The diameter is reduced by at least 1/3 during the drawing (see figure 6).

There is no indication of a pressure in the void. IT is noted that 700 torr is "about 760 Torr": the same applies to 725 torr and 750 torr. Atmospheric pressure is 760 torr: thus atmospheric pressure is "greater than or equal to about 760 Torr". There is no indication that MCVD or RIT process has the bore exposed to atmospheric pressure. It would have been obvious to perform the MCVD or RIT process at a

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pressure of at least atmospheric, so that one does not have to bother with a vacuum system.

Glodis is cited as teaching to keep a pressure in an MCVD tube to prevent a change in diameter (col. 5, lines 45-47). It would have been obvious to use a pressure at least equal to atmospheric pressure (in the Onishi MCVD process), to prevent atmospheric pressure from collapsing the tube. One of ordinary skill understands that there has to be a balance of pressures to prevent the tube from shrinking. It is deemed that the collapsing is sufficiently uniform and symmetrical for the Onishi and/or Glodis desired result.

Claim 3: it is deemed that both pressures (i.e. externally and internally) applied are "sufficient" to meet the stated condition. Figure 12 of Onishi clearly shows that that fiber has the low dispersion values for at least some locations. Also, other locations have unspun lengths: the spinning oscillates between positive locations and negative locations. And in-between those two lengths, there are locations where the spin is zero.

Alternatively: the Onishi fiber is always in a spun state - it is never in an "unspun" state. The claim limitations only pertains unspun fibers - there is no dispersion requirement which must be met for spun fibers. In other words, the Office is interpreting the claim to be: "if the fiber is unspun, then...." The claim does not limit spun fibers. The claims does not require the creation of an unspun fiber.

Claims 4-5: Onishi figure 12 show dispersions less than the 0.05 value.

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Claims 1,2 and 6, 18, 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maurer REISSUE 28,028.

Figure 1 shows the intermediate glass object with a hole. The heating and reducing are clearly represented. It is deemed that the reducing is done uniformly and symmetrically to the degree that is sufficient for the Maurer purpose. Also, see col. 3, lines 30-32 and col. 6, lines 13-15. Alternatively, it would have been obvious to do the drawing as uniformly and as symmetrically as possible because variations in the core diameter might significantly effect the transmission characteristics as Maurer teaches.

There is no indication of a pressure in the void. IT is noted that 700 torr is "about 760 Torr": the same applies to 725 torr and 750 torr. Atmospheric pressure is 760 torr: thus atmospheric pressure is "greater than or equal to about 760 Torr". There is no indication the process has the bore exposed to atmospheric pressure. It would have been obvious to perform the process at a pressure of at least atmospheric, so that one does not have to bother with a vacuum system.

Claim 2 is clearly met.

Claim 6: First it is noted that from instant figure 5, plug 66, appears not to be a separate piece that is inserted into the tube, rather it appears to be a heat-sealed section of the inner glass tube. Examiner notes this as an indication that Applicant does not use the term "plug" in any narrow sense. Maurer does not teach any plugging, however, col. 4, lines 71-72 and col. 7, lines 34-37 disclose using pure materials. IT would have been obvious to plug or cap the tube so as to prevent any material from

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getting into the tube – whenever the tube is not being worked on. It is deemed that any capping, plugging, etc. to keep out contaminants reads on the instant claims.

Claim 18: Examiner see claim 18 as merely an intention – there doesn't seem to be any sort of requirement that a fiber be actually drawn. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Claim 22: see figure 3: it would have been obvious to maintain the circular symmetry shown in figure 3, because there is no reason to change it, and because Maurer teaches variations are undesirable

Claim 23: it would have been obvious to have the fibers as symmetrical as possible, because variations are undesirable.

Claims 1-2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berkey 5152818.

See how Berkey was applied previously. There is an additional phrase added to line 5. It is noted that there is no conjunction, colon, semicolon to aid in determining what is meant by this phrase. There are various reasonable interpretations, for

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example, that there is an "and" missing after "hole". However, since the Office uses the broadest reasonable interpretation, the claim will be interpreted as missing an "or" – since it is broader than any other possible interpretation which is reasonable.

Figures 9-10 and 14 of Berkey show the invention. Figure 10: each of feature 80 corresponds to a hole. Every cylindrical hole has a centerline: therefore each cylindrical hole has a centerline. A centerline (by Examiner's dictionary) is " a real or imaginary line that is equidistant from the surface or sides of something. " Figure 4 represent the heating to reduce the outside diameter. It would have been obvious to have the holes close uniformly and symmetrically along the centerline axis, so that the fiber will have the same cross section at every location along its length. It is noted the claims do not limit what sort of symmetry must exist - and if it is uniform with respect to time, length, diameter or what.

Berkey does not actually mention the pressure. The present claim requires a pressure "greater than or equal to about 760 Torr". It is deemed that 700 Torr is about 760 torr, and that 740 is greater than 700. Atmospheric is at least 740 torr. From col. 7, lines 61-65: it is clear that no vacuum is necessary. It would have been obvious to use atmospheric pressure or higher because that is the only other choice when one does not have a vacuum. The claim does not limit when there must be the pressure.

Claim 2: it would have been obvious to have the hole completely closed because figure 10 shows no opening, and there in no reason to have an opening in the final fiber.

Claim 6: figure 14 shows that each centerline hole is plugged with 70: see col. 8, line 49.

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Claims 1-2, 12-14, and 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berkey 5917109.

Berkey clearly has a step of providing the glass object, the heating to reduce the diameter and closing of the hole. Berkey does not disclose the claimed pressure, but discloses use of a gas in the bore. It would have been obvious to use pressures near atmospheric pressure, because no pressure is indicated and because such would not require any extra high or low pressure apparatuses or techniques. See above for as how the claim limitations are interpreted.

AS to claim 2, it would have been obvious to have the bore close completely, because any openings may interfere with the optical signal and/or strength of the fiber.

Claims 12-13: see col, 4, line 46 to col. 5, line 32.

Claim 18: "for making a multimode fiber" is an intended use and imparts no manipulative difference to the claim

Claims 14,19-21 are met as per col. 5,lines 51-52.

Claim 22: see figure 6: it would have been obvious to maintain the circular symmetry shown in figure 6, because there is no reason to change it, and because if it changes, it would not result in the profile of figures 7 or 8.

Claim 23: it would have been obvious to have the fibers as symmetrical as possible, so that the fibers posses the desired profile of figure 7 or 8 at every position.

Response to Arguments

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

It is argued that Onishi and Glodis do not teach closing the outside diameter such that the hole closes uniformly and symmetrically. The relevance of this not understood, because there is no step of closing the hole uniformly and symmetrically. It appears that Applicant is interpreting the claim as requiring the uniform and symmetric closing – but the rationale for such an interpretation is not indicated. Perhaps there is some case law which examiner is not familiar with that Applicant is relying upon. It seems to examiner that since the claim is comprising in nature, that it is open to having additional conditions which result in at least part of the hole to collapse non-uniformly. Even if Applicant is correct, it is clear that the closure is sufficiently uniform and symmetrical for the purpose of Onishi.

It is further argued that the unspun regions in Onishi would not have the reduced PMD. This does not appear to be relevant, because the claim is not so limited. The claim is comprising in nature and is open to having sections which do not have the low dispersion values.

It is further argued that there is no evidence that Onishi didn't use VAD instead of MCVD or RIT. This is not important because Onishi discloses using MCVD to perform the invention. Although Applicant points out that spinning is not necessary for the present invention, such is not persuasive because the claims are comprising in nature and are open to a step of spinning.

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It is also argued that Applicant discovered that the holes can close non-uniformly and still achieve "the same cross-sectional dimension at every location". The relevance is unimportant. The rejection says nothing about a "cross-sectional dimension." The rejection is based on a "cross section."

IT is further argued that it is very common to not collapse tubes as symmetrically as possible, because the degree of non-symmetry does not substantially effect the properties of the fiber. This is not very relevant. The issue as to whether something is "common" is not universally relevant to whether something is obvious. It can be relevant in some secondary considerations – but none appears to be alleged or demonstrated. Maybe some secondary consideration is implied: if so, such should be clearly pointed out – and how the evidence of records supports such a finding (commensurate with the case law relevant to the particular secondary consideration alleged.) Most importantly, as evidenced by Maurer (a patent to Corning, Inc.) it has been known for over thirty years that "Variations in core diameter... may significantly affect the transmission characteristics of a waveguide" (col. 3, 30-32). Applicant's assertion that non-uniform fibers is not convincing – a lot of evidence will be needed before Examiner will agree with the assertion.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

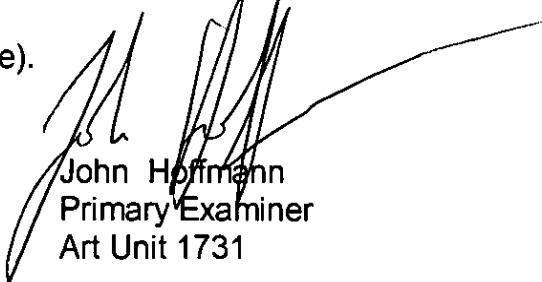
The rejection in view of Maurer was necessitated by the amendment, in that Examiner is not certain of the proper way to interpret the claims – and thus is not completely certain about the rejection in view of Berkey.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John Hoffmann
Primary Examiner
Art Unit 1731

jmh